

Quiz Tomorrow on Sound:

- Concepts

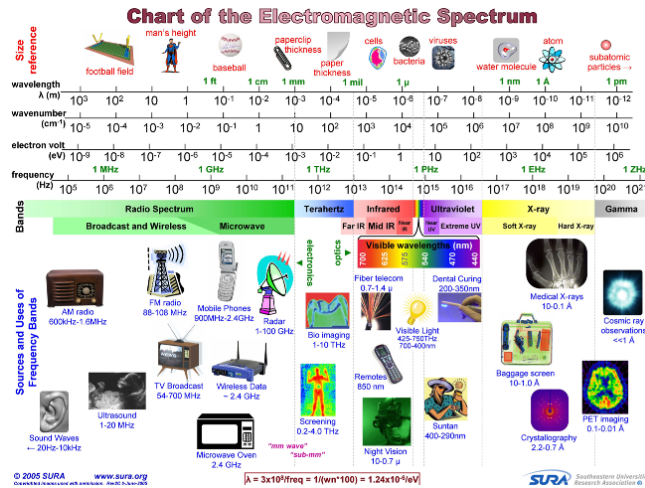
- Equations:

$$T = \frac{1}{f} \quad v = f\lambda$$

$$f_n = \frac{nv}{2L} \quad n = 1, 2, 3, \dots$$

$$f_n = \frac{nv}{4L} \quad n = 1, 3, 5, \dots$$

$$I = \frac{P}{4\pi r^2}$$



- Light :
 - Technical name is electromagnetic radiation
 - Wave/particle duality:
 - We can think of light as both waves and particles
 - Experiments have shown both to be true
 - Equations:

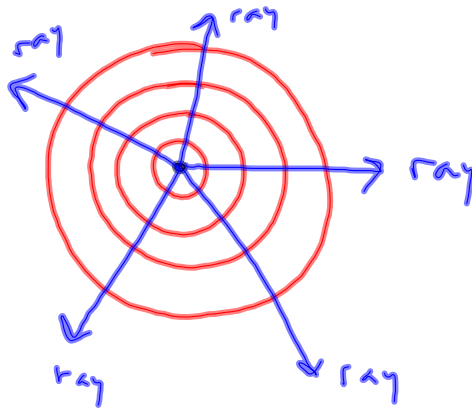
$$c = \lambda f = \frac{\lambda}{T}$$

↳ speed of light in a vacuum
 $3 \times 10^8 \text{ m/s}$

$$E = hf$$

↳ frequency
 ↳ Planck's constant
 $6.626 \times 10^{-34} \text{ J}\cdot\text{s}$
 ↳ energy

- Light is produced in all directions

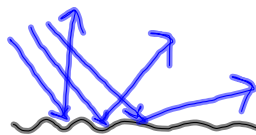


• What happens when light hits something?

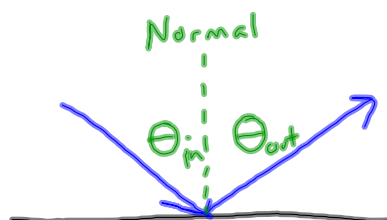
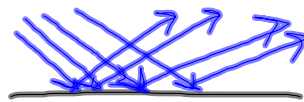
- Absorption
- Reflection
- Transmission

• Reflection:

1. Diffuse

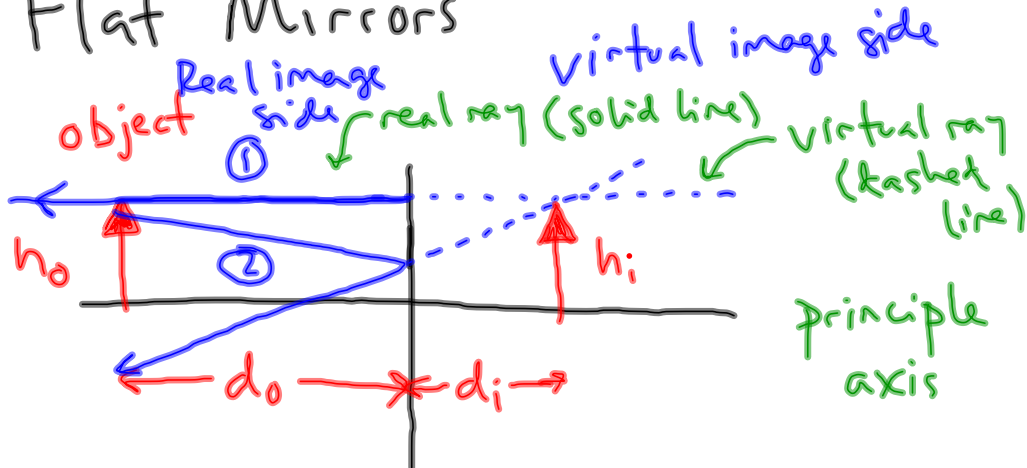


2. Spectral



$$\theta_{in} = \theta_{out}$$

• Flat Mirrors



Rays that we draw begin from top of object.

① parallel to principle axis

② off flat mirror at some angle

h_o = object height

d_o = object distance from mirror

h_i = image height

d_i = image distance from mirror

For flat mirror, $d_o = d_i$ and

$h_o = h_i$